Pump Performance Indicator

TM170

Course Overview:

The course will introduce participants to the different types of pumps and their associated terminology. Centrifugal and Positive-Displacement pumps, packing, mechanical seals and sealing systems, bearings and couplings will all be discussed. The application of the different types of pumps will be discussed along with their suitability for different operational duties. Pump operation, troubleshooting and maintenance will be dealt with in depth. effect of piping loads and energy savings through efficiency improvement and identification of the regime of operation to avoid problems present practical and immediate opportunities for implementation at the plant level.

Course Objective:

- -Be familiar with different pump classes and types
- -Be able to operate pumps as close as possible to the design efficiency
- -Will be able to monitor pump efficiency, availability and reliability
- -Have learnt about selection, operation and maintenance strategies
- -Be able to evaluate and implement energy savings and determine best operating zones
- -Be able to troubleshoot pump problems

Course Outline:

- -Pump Types and Terminology
- -Classification of Pumps. Differences and similarities. Photographs and cross-sectional views. List of Manufacturers.
- -Pump Performance (Centrifugal and Positive Displacement)
- -Pump performance curves: head-capacity, power, efficiency
- -Operating point control: valve throttling versus speed controller
- -Parallel operation
- -Sealing methods: packings, mechanical seals, and seal-less designs
- -Reassembly of a single stage end suction centrifugal pump
- -Pump Wear Rings
- -Single-Stage and Multi-Stage Pumps
- -Failure Mechanisms – identification and monitoring
- -Positive Displacement Pumps
- -Performance characteristics
- -Lubrication: hydrodynamic versus boundary (PV values)
- -Hands-On Exercise: reassembly of a gear pump. Changing of worn bushings, gears, shafts and seals
- -Seals and Bearings
- -Reliability
- -Couplings
- -Alignment: Piping and Baseplates
- -Planned Maintenance - Predictive and Preventive

Training Language:

EN / AR

Training Methodology:

- -Presentation & Slides
- -Audio Visual Aids
- -Interactive Discussion
- -Participatory Exercise
- -Action Learning
- -Class Activities
- -Case Studies
- -Workshops
- -Simulation

-Flow-Pressure envelope

-Viscosity

-Abrasiveness

-Temperature

-Self-Priming

-Driver

Who Should Attend:

Mechanical, Operation, Production, and Maintenance Engineers Senior Technicians should benefit from this course. Also Senior Technicians should update and refresh their knowledge by attending this course.